

**Notice of Allowability**

Application No.

10/797,105

Applicant(s)

HWANG ET AL.

Examiner

Art Unit

Thomas D. Alunkal

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment After Final filed 7/16/07.
2. ☒ The allowed claim(s) is/are 1-25 and 27-38.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

WAYNE YOUNG  
SUPERVISORY PATENT EXAMINER

**Examiner's Amendment**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Hung H. Bui on 8/3/07.

The application has been amended as follows:

**In the Claims:**

- a. In claim 32, change "The method of claim **26**" to "The method of claim **25**".
- b. In claim 37, change "The method of claim **26**" to "The method of claim **25**".

**Comments:**

The amendments to the claims have0 been made because claims 32 and 37 were dependent from claim 26, which was previously cancelled.

***Allowable Subject Matter***

Applicant has submitted verified English translations of the foreign priority documents. The Examiner has reviewed these translations and deems them supportive of the subject matter of the present application.

Claims 1-25 and 27-38 allowed.

The following is an examiner's statement of reasons for allowance: The prior art (see cited references) taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, 1, 3, 5, 9, 11, 13, 17, 21 and 25 in such a manner that a rejection under 35. U.S.C 102 or 103 would be proper.

Regarding claim 1, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a method of managing disc defects occurring on a write once disc that is a single recording layer disc in which a lead-in area, a data area and a lead-out area are sequentially formed and a first spare area and a second spare area are formed at both ends of the data area, respectively, the method comprising: allocating a first temporary defect management area to at least one of the lead-in area and the lead-out area, ***allocating a second TDMA between the first spare area and a user data area or between the user data area and the second spare area***, allocating a defect management area (DMA) to at least one of the lead-in area and the lead-out area , and

performing disc defect management using the first and second TDMA's, and the DMA, including recording temporary management information, which is most recently updated in the first or second TDMA, in the DMA.

Regarding claim 3, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a method of managing disc defects occurring on a write once disc that is a dual layer optical disc including a first recording layer in which a lead-in area, a data area, and an outer area are formed along with a recording path and a first spare area and a second spare area are respectively formed at both ends of the data area, respectively, and a second recording layer in which an outer area, a data area, and a lead-out area are formed along a recording path and a third spare area and a fourth spare area are respectively formed at both ends of the data area, the method comprising: allocating a first temporary defect management area (TDMA) to at least one of the lead-in area, the lead-out area, and the outer area , ***allocating a second TDMA between the first spare area and a user data area in the data area, on the first recording layer of the write once disc, and/or between the forth spare area and a user data area in the data area***, on the second recording later of the write once disc, allocating a defect management area (DMA) to at least one of the lead-in area, the lead-out area, and the outer area, and performing disc defect management using the first and second TDMA's, and the DMA including temporary management information which is most recently updated in the first or second TDMA, in the DMA.

Regarding claim 5, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a method of managing disc defects occurring on a write once

disc, the method comprising: **updating a second temporary defect management area (TDMA) of a data area of the write once disc whenever data is recorded in the data area in a predetermined recording period**, and updating a first TDMA formed in at least one of a lead-in area, a lead-out area, and an outer area of the write once disc whenever data is recorded in the data area of the write once disc in another predetermined recording period, and recording temporary management information which is most recently updated in the first or second TDMA, in a defect management area (DMA) formed in at least one of the lead-in area, the lead-out area, and the outer area.

Regarding claim 9, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a disc drive, comprising: a pickup to record data on and read data from a write once disc that is a single recording layer disc in which a lead-in area, a data area, and a lead-out area are sequentially formed and first and second spare areas are respectively formed at opposite ends of the data area; and a controller arranged to control the pickup to allocate a first temporary defect management area (TDMA) to at least one of the lead-in area and the lead-out area of the write once disc, **to allocate a second TDMA between a first spare area and a user data area or between the user data area and a second spare area**, to allocate a defect management area (DMA) to at least one of the lead-in area the lead-out area, and to perform disc defect management on the write once disc using the allocated first and second TDMA's and the DMA including recording temporary management information, which is most recently updated in the first or second TDMA, in the DMA.

Regarding claim 11, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a disk drive, comprising: a pickup to record data on and read data from a write once disc that is a dual layer disc including a first recording layer in which a lead-in area, a data area including a user data area and a first and second spare areas respectively formed at opposite ends of the user data area, and an outer area are formed along a recording path, and a second recording layer in which an outer area, a data area including a user data area and third and fourth spare areas respectively formed at opposite ends of the user data area, and a lead-out area are formed along a recording path; and a controller arranged to control the pickup to allocate a first temporary defect management area (TDMA) to at least one of the lead-in area, the lead-out area, and the outer area of the write once disc, ***to allocate a second TDMA between the first spare area and the user data area on the first recording layer and/or between the fourth spare area and the user data area on the second recording layer***, to allocate a defect management are (DMA) to at least one of the lead-in area, the lead-out area and the outer area, and to perform disc defect management on the write once disc using the allocated first and second TDMA's and the DMA, including recording temporary management information, which is most recently updated in the first or second TDMA, in the DMA.

Regarding claim 13, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a disc drive comprising: a pickup arranged to record data on and read data from a write once disc having a lead-in area, a data area, and a lead-out area in which the data area is provided with a user data area and first and second spare

areas respectively formed at opposite ends of the user data area; **and a controller arranged to control the pickup to update a second temporary defect management area (TDMA) formed in the user data area of the write once disc when data is recorded in the user data area in a predetermined recording period**, to update a first TDMA allocated in at least one of the lead-in area and the lead-out area of the write once disc when data is recorded in the user data area in another predetermined recording period, and to record temporary management information which is recently updated and recorded in the first or second TDMA, in a defect management area (DMA) allocated in at least one of the lead-in area and the lead-out area.

Regarding claim 17, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a write once disc that is a single record layer disc in which a lead-in area, a data area, and a lead-out area are sequentially formed and a first spare area and a second spare area are sequentially formed in the data area, the write once disc comprising: a defect management area (DMA) formed in at least one of the lead-in area and the lead-out area; a first temporary defect management area (TDMA) formed in at least one of the lead-in area and the lead-out area; and **a second TDMA formed between the first spare area and a user data area or between the user data area and the second spare area**, wherein temporary management information, which is most recently updated in the first or second TDMA, is recorded in the defect management area (DMA).

Regarding claim 21, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a write once disc that is a dual layer optical disc including a

first recording layer in which a lead-in area, a first data area, and a first outer area are sequentially formed along a recording path and a first spare area and a second spare area are formed at both ends of the first data area, and including a second recording layer in which a second outer area, a second data area, and a lead-out area are sequentially formed along a recording path and a third spare area and a fourth spare area are respectively formed at both ends of the second data area, the write once disc comprising: a DMA formed in at least one of the lead-in area, lead-out area, and outer area, a first TDMA formed in at least one of the lead-in area, the lead-out area, and the outer area, and ***a second TDMA formed between the first spare area and a user data area of the first data area on the first recording layer, and/or between the fourth spare area and the user data area of the second data area on the second recording layer***, wherein recording temporary management information, which is most recently updated in the first or second TDMA, is recorded in the DMA formed in at least one of the lead-in area, the lead-out area, and the outer area.

Regarding claim 25, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a method of managing defects in a recording medium, comprising: allocating a first temporary defect management area (TDMA) to a first predetermined area on the recording medium; allocating a second TDMA to a second predetermined area on the recording medium; allocating a defect management (DMA) to the first predetermined area, and performing disc defect management using the first TDMA, the second TDMA and the DMA, including recording temporary management information which is most recently updated in the first or second TDMA, in the DMA,

***wherein the second predetermined area is within a data area of the recording medium and is separate from the first predetermined area***, and wherein the recording medium is a write once optical disc.

Dependent claims 2, 4, 6-8, 10, 12, 14-16, 18-20, 22-24, and 27-38.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim et al. (US 6,564,345) discloses a method for creating/writing defect management information of an information recording medium and an apparatus and optical disc based on the method. In the present invention, it depends on the type of data to be reproduced whether or not defective sectors which are detected during reproduction operation are replaced with non-defective sectors. If read-out errors are detected in reproducing non-audio/video data, linear replacement algorithm is applied to the corresponding defective sectors. On the other hand, in case of audio/video data, location information of the corresponding defective sectors is just kept without any sector replacement. Therefore, this invention enables to reproduce audio/video data in real-time regardless of the presence of defective sectors and to avoid writing data to the defective sectors when new data is overwritten to the information recording medium. Ito

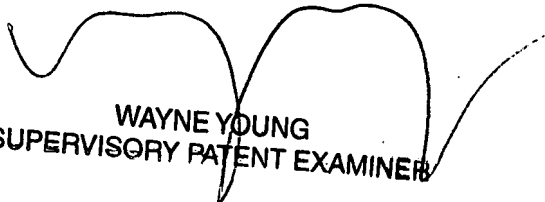
et al. (US PgPub 2003/0137909) discloses a multi-layered information recording medium including a plurality of recording layers, the multi-layered information recording medium comprising: a user data area for recording user data; and a plurality of spare areas including at least one replacement region, wherein when the user data area includes at least one defect region, the at least one replacement region may be used in place of the at least one defect region, wherein a first spare area of the plurality of spare areas is positioned so as to be contiguous to a first user data area of a first recording layer, a second spare area of the plurality of spare areas is positioned so as to be contiguous to a second user data area of a second recording layer, and the first spare area and the second spare area are positioned approximately at the same radial position on the multi-layered information recording medium.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Alunkal whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas Alunkal/  
Examiner AU 2627

  
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